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ABSTRACT

The report of research on English grammar argues that the intransitive resultative construction requires head-movement of the secondary predicate to the main predicate in order to assign the theta-role to the postverbal NP in LF. Then, this construction is taken as an instance in which theta-role assignment is derivational, supporting the findings of previous studies. This analysis then leads to the conclusion that D-structure and S-structure, if they do exist, do not play any crucial role with respect to theta-role assignment and the Projection Principle can not be maintained as stated in a previous theory. What is required is that all theta-relations must be established by LF. (Contains 45 references.) (MSE)

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TWO PROPERTIES OF THE INTRANSITIVE RESULTATIVE CONSTRUCTION

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Abstract: This paper argues that the intransitive resultative construction requires head-movement of the secondary predicate to the main predicate in order to assign the theta-role to the postverbal NP in LF. Then, this construction is taken as an instance in which theta-role assignment is derivational. This supports Bowers, 1993; Chomsky, 1993, 1995; Larson, 1988, among others. The analysis presented in this paper then leads to the conclusion that D-structure and S-structure, if they exist, do not play any crucial role with respect to theta-role assignment and the Projection Principle, cannot be maintained as stated in Chomsky, 1981. What is required is that all theta-relations must be established by LF.

1 Introduction

This paper examines two properties of the intransitive resultative construction, which is exemplified in (1a,b). These examples are from Carrier and Randall (C&R, hereafter: 1992).

(1)a. The joggers ran their Nikes threadbare.
b. He sneezed the handkerchief soggy.

The interpretation of (1a) is that the joggers ran, and as a result of this running, their Nikes became threadbare. (1b) describes the situation in which someone sneezed, and as a result of his sneezing, the handkerchief became soggy.

Two properties which I will examine in this paper are [1] that in examples like (1a,b), the NP which occupies a postverbal position behaves like an adjunct in overt syntax but like an argument in LF, and [2] that examples like (1a,b) allow resultative interpretation, but not depictive interpretation. For instance, (1a) cannot mean that when Nikes were threadbare, the joggers ran.

In order to examine these two properties, this paper is organized as follows. Section 2 discusses these properties in detail. In this section, I will introduce a restriction on the occurrence of an object-oriented secondary predicate (OSP, hereafter), and work by C&R (1992, 1993), which argues for the (non-)argument status of the postverbal NP in the (in)transitive resultative construction. This section will also deal with C&R's

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evidence that the postverbal NP of the intransitive resultative construction behaves like an argument. In Section 3, I will first introduce an analysis of adjunct secondary predicates which I will assume in this paper. Then, I will examine the intransitive resultative construction, and propose that in the intransitive resultative construction, the postverbal NP obtains an argument status when the head of the secondary predicate is incorporated into the head of the main predicate. Based on this raising analysis, I will account for the two properties of the intransitive resultative construction in Section 4. Then, in Section 5, I will deal with Op-movement in the intransitive resultative construction. Finally, Section 6 contains concluding remarks.

2 Two Questions Regarding the Intransitive Resultative Construction

The Postverbal NP Requirement It is known (e.g., Simpson, 1983, C&R, 1992, and Rothstein, 1983, 1992) that resultative secondary predicates may be predicated only of a direct object.[1] Consider first the following examples:

(2)a. John painted the house red.
b. John cut the meat thin.

Both of these examples contain a direct object, and thus, the above restriction is not violated. Let's now turn to the following examples:

(3)a. John laughed himself tired.
b. John laughed tired.

(3a) means that John laughed, and as a result, he became tired. In this example, because of the restriction on the resultative construction, the reflexive *himself* is inserted. (3b), on the other hand, cannot describe the same situation. Rather, it describes the situation in which John laughed and John was also tired. Because no direct object is present in this example, it does not allow the resultative interpretation. The only interpretation available to this example is thus the depictive interpretation. Then, the remaining question is why (3a) does not allow the depictive interpretation.

The Status of the Postverbal NP Although the postverbal NP must be present in the intransitive resultative construction as well as in the transitive resultative construction, C&R (1992, 1993) provide three pieces of evidence for the claim that only the postverbal NP of the latter construction is an argument.

First, the transitive resultative construction allows middle formation, while the intransitive resultative construction does not. Witness the following contrast:

(4)a. My running socks$_1$ won't wash t_1 clean.
b. New seedlings$_1$ water t_1 flat easily.

(5)a. *This type of pavement$_1$ runs t_1 thin easily.
b. *Delicate feet$_1$ walk t_1 to pieces easily.

Although Keyser and Roeper (1984) argue that passives and middles involve the same two operations; namely, the suppression of the predicate's external argument and its ability to assign accusative case, Fagan (1988) notes that middle formation is more restricted than passive formation. Consider the following examples adopted from C&R (1992):

(6)a. The politician was laughed at.
b. *Politicians laugh at easily.

Considering this contrast, C&R propose that the middle formation applies to a verb only if it has a direct internal argument. Given this restriction, the contrast between (4a,b) and (5a,b) shows that only the transitive resultative construction has a direct internal argument.

Second, only the transitive resultative construction allows nominal formation, as shown in the contrast between (7a,b) and (8a,b):

(7)a. The painting of fire engines the color of school buses is strictly prohibited by state law.
b. The surgeon general warns against the cooking of food black.

(8)a. *The talking of one's confidant silly is a bad idea.
b. *Inebriation is often accompanied by the laughing of oneself sick.

Chomsky (1986b) argues that nouns are inherent Case assigners, and that inherent Case is associated with theta-marking. Thus, theta-marking is required for a postnominal NP to receive Case. Given this proposal, in (7a,b), *school buses* and *food* are assigned theme theta-roles from the main predicates, and thus, receive inherent Case. If *one's confidant* and *oneself* in (8a,b) were arguments of the Ns, there would be no obvious reason why these NPs could not receive inherent Case from the Ns. Given that this line of analysis is correct, the contrast between (7a,b) and (8a,b) constitutes evidence for the claim that only the transitive resultative construction has a direct internal argument.

Finally, adjectival passive formation is possible only in the transitive resultative construction. (9a,b) contrast with (10a,b):

(9)a. the spun-dry clothes
b. the squashed-flat grapes

(10)a. *the laughed-sick teenagers
b. *the run-thin pavement

Levin and Rappaport (1986) show that the adjectival passive formation applies to a verb only if it has a direct internal argument. Then, the grammatical contrast between (9a,b) and (10a,b) indicates that only the transitive resultative construction has a direct internal argument.

So far, C&R's (1992, 1993) evidence indicates that the postverbal NP in the intransitive resultative construction is not a direct internal argument. However, there is another evidence which suggests that the postverbal NP behaves like an argument. Consider the following examples from C&R (1992):

(11)a. ?Which metal do you wonder who hammered flat?
b. ?Which metal do you wonder whether to hammer flat?

(12)a. ?Which sneakers do you wonder who ran threadbare?
b. ?Which sneakers do you wonder whether to run threadbare?

The grammaticality of these examples is parallel to that of (13a,b) which involve extraction of arguments out of WH-islands, but it is clearly different from that of (14a,b) which involve extraction of adjuncts out of WH-islands:

(13)a. ?Which boys do you wonder whether to punish?
b. ?Which guests do you wonder which dishes to serve?

(14)a. *How do you wonder whether to punish these boys?
b. *How do you wonder which boys to punish?

This parallelism between arguments and postverbal NPs in the intransitive resultative construction with respect to extraction thus constitutes evidence for the argument status of postverbal NPs in the intransitive resultative construction.

The movement of WHs in (11a, 12a) and (11b, 12b) can be schematized roughly as follows:

(15) $[_{CP}WH_1 \dots [_{VP}t_1" [_{VP} \dots [_{CP}WH_2 [_{AGRP} t_1' [_{AGRP} t_2 [_{TP} \dots [_{VP} \dots t_1 \dots]]]]]]]]$

(16) $[_{CP}WH_1 \dots [_{VP}t_1" [_{VP} \dots [_{CP}$ whether $[_{AGRP} t_1' [_{AGRP} [_{TP} \dots [_{VP} \dots t_1 \dots]]]]]]]]$

No matter how the marginality of these examples is accounted for, we should notice that when it comes to WH-movement, the postverbal NP of the intransitive resultative construction behaves parallel to that of its transitive counterpart. In other words, it acts

like an argument. The question to be raised is then why the postverbal NP of the intransitive resultative construction behaves like an adjunct in the above three respects, and acts like an argument in this respect.

3 Towards Solutions to the Two Questions

Secondary Predicates and the Stage-Level/Individual-Level Distinction[2] Kratzer (1989) shows that the subject of an individual-level predicate is sensitive to the tense of a sentence.[3] Consider (17a-d):

(17)a. Aunt Theresa resembled my grandmother.
b. My grandmother resembled Aunt Theresa.
c. Aunt Theresa resembles my grandmother.
d. My grandmother resembles Aunt theresa.

Suppose that Aunt Theresa is alive, but the grandmother is already dead. In this context, (17b) and (17c) are true, but (17a) and (17d) are false or are cases of presupposition failure. This fact is naturally accommodated, she argues, if the tense predicate of (17a-d) applies to the external argument of the main predicate. If the subject of an individual-level predicate occupies TP SPEC, and receives a theta-role of the complex of tense and the matrix predicate, the sensitivity of the subject of an individual-level predicate to tense naturally follows.

Further, the following paradigm suggests that the event argument of a stage-level predicate seems to be sensitive to the past/non-past distinction, as the subject of an individual-level predicate is:

(18)a. John is happy right now.
b. *John is happy yesterday.
c. *John was happy right now.
d. John was happy yesterday.

Since Davidson (1967), it has been argued (e.g., Kratzer, 1989) that temporal expressions like *right now* and *yesterday* modify the event argument.[4] For instance, (18a) may have the following semantic representation:

(19) event e: happy (j,e) & right now (e)

Given this assumption, the above paradigm can be accounted for in the following manner. Suppose that the event argument is sensitive to the past/non-past distinction. Then, the interpretation of the event in (18a,b) is:

(20) e is a non-past event of John's being happy.

Since this event is non-past, *yesterday* cannot modify this event, causing a semantic anomaly in (18b). On the other hand, *right now*, as in (18a), can successfully modify this event, since this temporal expression is lexically specified to modify a non-past event. The opposite situation is obtained, if the event is past as in (18c,d). Since the event argument receives the past event theta-role, only *yesterday* can modify the event. (18a-d) then can be taken as evidence for the hypothesis that the event argument of a stage-level predicate is sensitive to tense. If this event argument appears in TP SPEC, as the subject of an individual-level predicate does, the sensitivity of this event argument to tense is naturally expected.

Kratzer adopts (21) to guarantee that the most external argument is realized as an argument of the tense predicate.

(21) Argument Linking
In deep structure, all arguments except the external argument are realized within the maximal projection of their predicate.

(Williams, 1981)

Further, she assumes the following theta-role hierarchy:

(22) Event > Agent > Experiencer > Theme

(Kratzer, 1989)

Given these assumptions, no matter whether a sentence contains a stage-level predicate or an individual-level predicate, the most external argument is realized outside the maximal projection of its predicate. For instance, *intelligent* has only a theme theta-role, and thus, this is considered the most external theta-role. Therefore, the phrase receiving this theta-role must be realized outside the maximal projection of this predicate. The verb *eat* has an event, an agent, and a theme theta-role. According to the theta-role hierarchy in (22), the event theta-role is considered its most external theta-role, and thus, the phrase with this theta-role must be realized outside the VP.

Although Kratzer's system appears to guarantee that the most external argument appears outside of the predicate, it is not clear why it has to appear in TP SPEC, not in AGRsP SPEC or AGRoP SPEC, for instance. Considering this, I replace (21) by (23):

(23) All predicates must be raised to tense in order to assign the most external theta-role.

According to (23), the most external argument is an argument of a complex predicate consisting of tense and a main predicate; i.e., a tense predicate. Then, it is natural that the most external argument occupies TP SPEC in order to receive a theta-role from the tense predicate. In languages such as French, where the predicate head moves overtly to

AGRs via tense (e.g., Belletti, 1990; Chomsky, 1991; Watanabe, 1993), *Jean* in (24) receives an experiencer theta-role in overt syntax:[5]

(24) $[_{AGRsP}Jean_1\ [_{AGRs'}aime_2\ [_{TP}t_1[_{T'}t_2'[_{VP}t_2$ la musique]]]]]
likes music
'Jean likes music.'

On the other hand, in languages such as English, verb raising takes place in LF (See the references above). The NP *John* in (25) is assigned an experiencer theta-role when the predicate head is raised to AGRs via tense in LF.

(25) $[_{AGRsP}John_1\ [_{AGRs'}likes_2\ [_{TP}t_1[_{T'}t_2'[_{VP}t_2$ music]]]]]

I further assume that event theta-roles allow theta-identification (Higginbotham, 1985). This hypothesis provides a principled account for the ungrammaticality of (26a-c), which show that individual-level predicates cannot appear either as a main predicate or as a secondary predicate in a sentence containing a secondary predicate.[6] These examples contrast with (26d):

(26)a. *John is happy left-handed.
b. *John is intelligent tired.
c. *John is intelligent left-handed.
d. John is happy tired.

Under (23), all the main predicates in these examples must be raised to tense in order to assign its most external theta-role.[7] What is particular to these examples is that the secondary predicates, in addition to the main predicates, must be associated with tense, either by theta-identification or by raising to tense, in order to assign their most external theta-role.

In (26a,c), on the assumption that the structure of the secondary predicate *left-handed* is as in (27), the head of this predicate must be raised to the matrix tense in order to assign its most external theta-role, namely its theme theta-role, since theta-identification is not available for theme theta-roles and there is no tense within AGRP.

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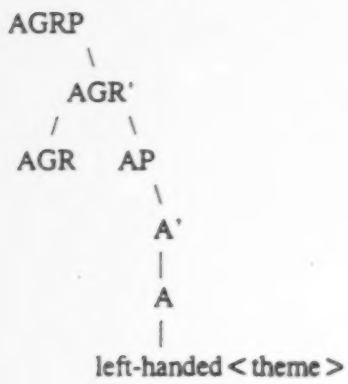
(27)



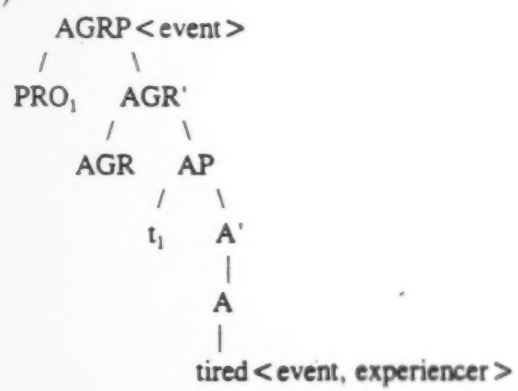
The problem of (26a,c) is the extraction of this predicate head out of the AGRP in (27). As can be seen from the ungrammaticality of the following examples, the AGRP in (27) has an adjunct status:

(28)a. *Who was Mary tired angry at?
b. *What did you swim happy about?

Then, this AGRP is a barrier for the extraction of the AP head *left-handed* out of this maximal projection, which necessarily results in an ECP violation. Thus, an individual-level predicate cannot appear as an adjunct secondary predicate. Thus, examples like (26a,c) are ungrammatical.

Let us now turn to (26b,d). The structure of the stage-level secondary predicate *tired* of these examples is as follows:

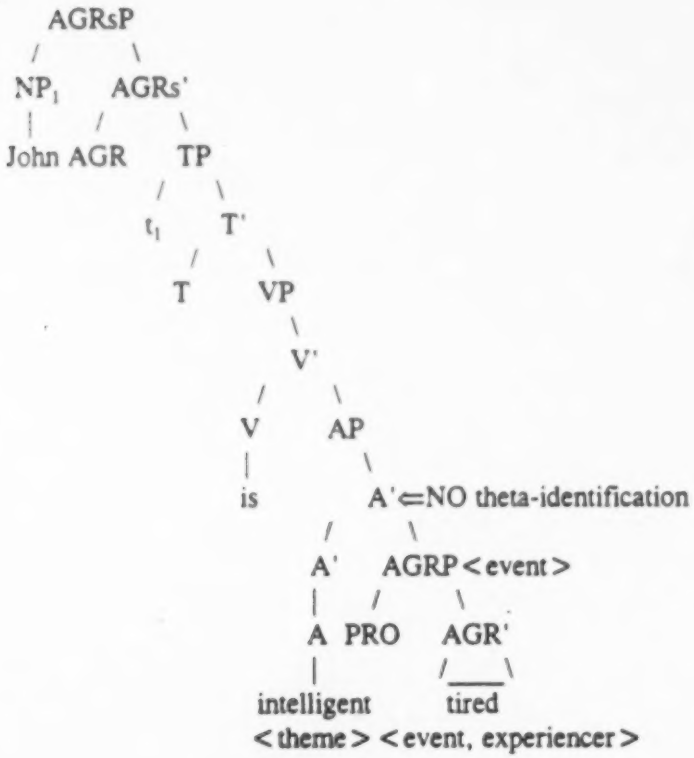
(29)



Since the experiencer theta-role is not the most external theta-role, it can be assigned to PRO within the AGRP without the AP head *tired* being associated with tense. In

contrast, the event theta-role of this secondary predicate, which is the most external theta-role, cannot be assigned within the AGRP. This theta-role has to be assigned via theta-identification to the event argument in the matrix clause. However, under Kratzer's event argument hypothesis, individual-level predicates lack an event theta-role, hence, in (26b), which has the structure given in (30), theta-identification of the event theta-role of the secondary predicate *tired* is not possible. Thus, this event theta-role fails to be assigned, which results in a Theta-Criterion violation.[8]

(30)



In contrast, in (26d), since the main predicate is stage-level, it has an event theta-role with which the event theta-role of the secondary predicate can be theta-identified. This is illustrated in (31):

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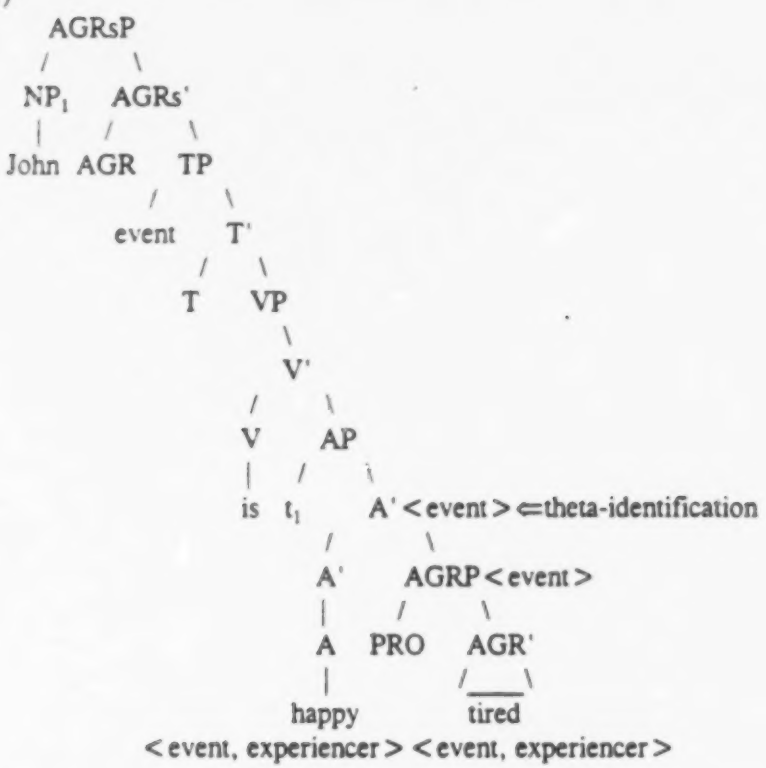
(31)



This merged event theta-role is assigned to the event argument in the matrix TP. Thus, there is no Theta-Criterion violation in this example.

Given this analysis of adjunct secondary predicates, I will deal with the intransitive resultative construction in the next section.

The Intransitive Resultative Construction

The argument status of secondary predicates: C&R (1992) argue that the argument structures of the verbs in the transitive and intransitive resultative constructions are as in (32a,b) respectively:

(32)a. Transitive Verb <Agent, Theme, Resulting State>
b. Intransitive Verb <Agent, Resulting State>

The difference between the two resultative constructions is that the transitive resultative construction contains a theme argument, whereas the intransitive resultative construction lacks this argument:

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As evidence for the argument status of secondary predicates, C&R (1992) show that the behavior of these secondary predicates is parallel to that of arguments. Consider the following examples:

(33)a. ?How flat do you wonder whether they hammered the metal?
(McNulty, 1988)
b. ?How shiny do you wonder which gems to polish?

(34)a. ?How threadbare do you wonder whether they should run their sneakers?
b. ?How hoarse do you wonder whether they sang themselves?

All of the examples involve extraction of a WH-phrase out of a WH-island. It is important to observe that although extraction of the secondary predicates in these examples is marginal, as shown in (33a,b) and (34a,b), these examples are not as ungrammatical as typical ECP violations. This indicates that the trace left in the original position by movement of the secondary predicate is theta-marked. C&R argue that it is theta-marked by the main predicate, and take these examples as evidence for the argument status of the secondary predicates.

Given the analysis of adjunct secondary predicates presented in the previous section, the event argument must be added to (32a,b), as in (35a,b):

(35)a. Transitive Verb <Event, Agent, Theme, Resulting State>
b. Intransitive Verb <Event, Agent, Resulting State>

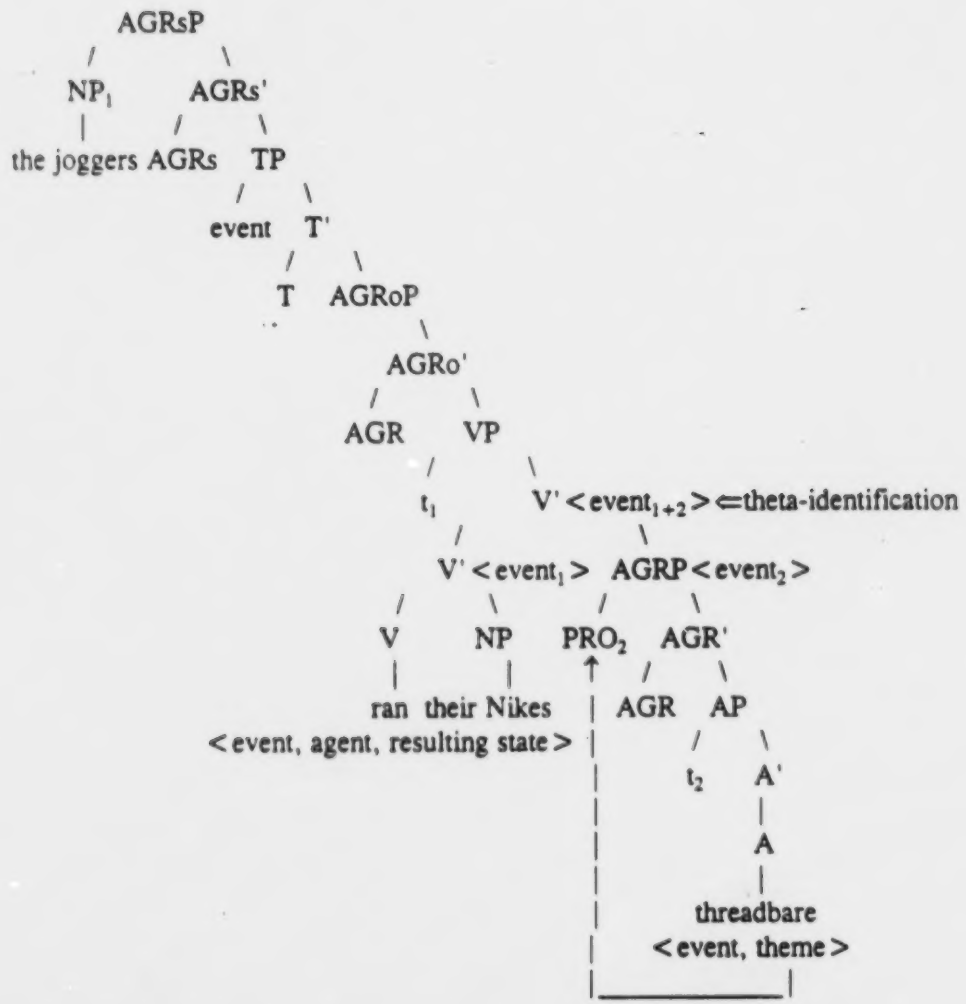
An analysis of the intransitive resultative construction: I now examine the intransitive resultative construction, exemplified in (1a,b), repeated here as (36a,b):

(36)a. The joggers ran their Nikes threadbare.
b. He sneezed the handkerchief soggy.

(36a) can only mean that the joggers ran, and as a result of this running, their Nikes became threadbare. (36b) is used to describe a situation in which he sneezed, and as a result of this sneezing, his handkerchief became soggy.

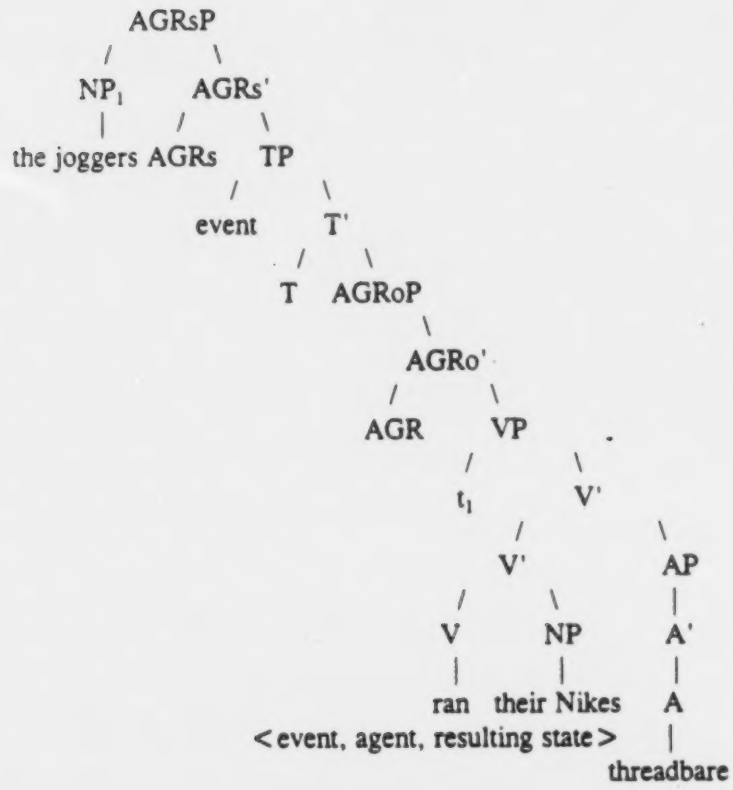
Recall the restriction on the resultative construction which requires the main predicate to have a direct object. Given this peculiar restriction, the postverbal NP must be located within the main predicate. I propose further that verbs which can head intransitive resultatives can select either a bare predicate phrase such as AP and PP or AGRP as secondary predicates. If AGRP is selected for the resultative secondary predicate, the structure of (36a), for example, is as follows:

(37)



In this structure, the theme theta-role of the secondary predicate is assigned to PRO within the AGRP, and the event theta-role is theta-identified with that of the main predicate. The problem is, however, that there is no theta-role assigned to the postverbal NP *their Nikes*. Hence, the Theta-Criterion is violated. Thus, this structure is not available to (36a).[9] Then, the structure of this example must be as follows:

(38)



Let me concentrate on the theme theta-role of the secondary predicate. Recall that theta-identification is assumed to be restricted to event theta-roles. Thus, this theta-role cannot be assigned via theta-identification. Then, the head of the secondary predicate must be raised to the main predicate in order to assign this theta-role in LF. Since the AP is an argument of the main predicate in this example, the raising of the head of this secondary predicate is permitted. This raising operation is illustrated in (39):

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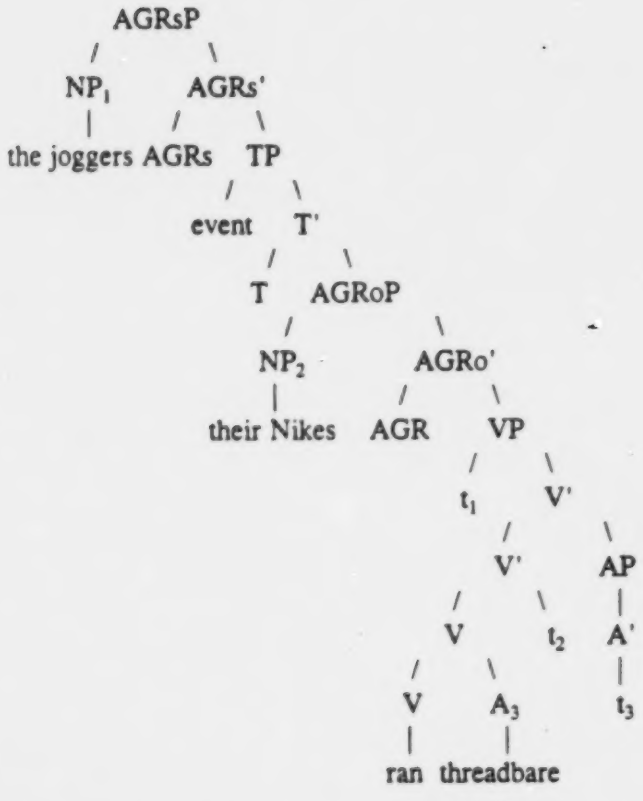
(39)



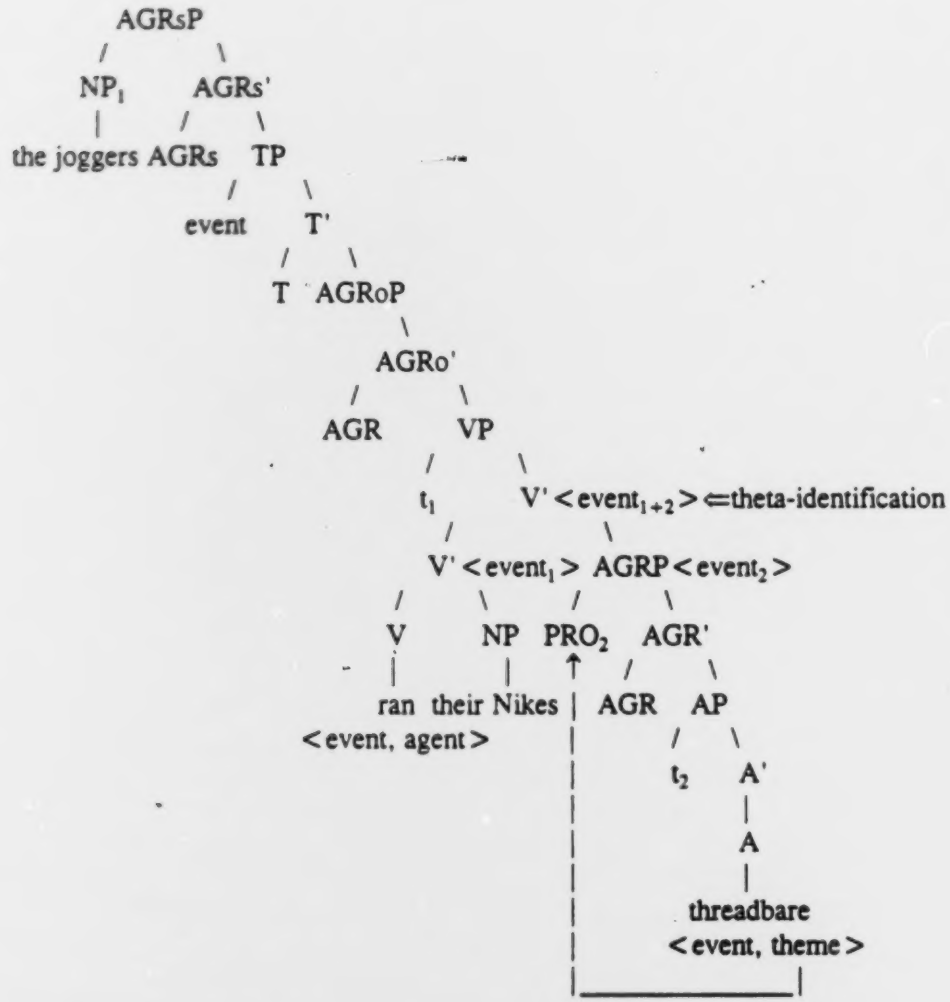
By this incorporation of the head of the secondary predicate to the matrix predicate, the theme theta-role of the secondary predicate is added to the argument structure of the main predicate. The event theta-role of the secondary predicate is theta-identified with that of the main predicate, and thus, this theta-role of the secondary predicate does not change the argument structure of the main predicate. As a result, this complex predicate consisting of the main predicate and the secondary predicate has the event, the agent, the theme and the resulting state theta-roles to assign. Then, the postverbal NP can be assigned this theme theta-role from this complex predicate in LF. The intransitive resultative construction is thus an instance where raising of a predicate is forced for thematic reasons.

4 Answers to the Two Questions

Why is only Resultative Interpretation allowed? The present analysis provides an account for why (36a,b) allow only the resultative interpretation. Recall that on the depictive interpretation, a secondary predicate is not selected by the main predicate. Hence, it is an adjunct. The head of the secondary predicate thus cannot be incorporated into the head of the main predicate in order to assign its theta-roles because of the ECP. Then,

the only possibility would be that the secondary predicate is AGRP whose SPEC is occupied by PRO. The structure of (36a) would thus be as follows:

(40)



In this structure, the theme theta-role of the secondary predicate is assigned to PRO within AGRP, and the event theta-role is theta-identified with that of the main predicate. The problem is that there are no theta-roles available to the NP *their Nikes*. Hence, this violates the Theta-Criterion, and (40) is not available, either. The present analysis thus leads to the conclusion that no structures which allow the depictive interpretation is available for (36a). Although I do not discuss (36b), the unavailability of the depictive interpretation in this example also receives the same account.

Why does the Postverbal NP behave as an Argument? The present analysis also makes the following prediction. Although the postverbal NP is not an argument before the secondary predicate adjoins to the main predicate, namely before LF, it establishes the argument status after this operation, that is, in LF. We have seen in Section 2 that the postverbal NP in this construction does not behave as an argument. However, it should be realized that all the operations mentioned there are those applying in the lexicon and in overt syntax before LF. Hence, the present analysis (correctly) predicts the asymmetry between the transitive and the intransitive resultative constructions. Only the postverbal NP of the former construction behaves as an argument of the main predicate in these respects. On the other hand, if there is a principle/condition which cares about the status of the postverbal NPs in LF, the postverbal NP in the above two resultative constructions should behave the same. That is, they should behave as an argument. Extraction of the postverbal NP may be such a case. Let us repeat the relevant examples:

(41)a. ?Which metal do you wonder who hammered flat?
b. ?Which metal do you wonder whether to hammer flat?

(42)a. ?Which sneakers do you wonder who ran threadbare?
b. ?Which sneakers do you wonder whether to run threadbare?

Considering the marginality of these examples, we can conclude that there is no ECP violation involved. Rather, the marginality of these examples results from Subjacency, due to the WH-island. Then, the original trace, t_1, left behind by movement of the postverbal NP in (43) and (44), must be lexically governed:

(43) $[_{CP}WH_1 \ldots [_{VP}t_1" [_{VP} \ldots [_{CP}WH_2 [_{AGRP} t_1' [_{AGRP} t_2 [_{TP} \ldots [_{VP} \ldots t_1 \ldots]]]]]]]]$

(44) $[_{CP}WH_1 \ldots [_{VP}t_1" [_{VP} \ldots [_{CP}$ whether $[_{AGRP} t_1' [_{AGRP} [_{TP} \ldots [_{VP} \ldots t_1 \ldots]]]]]]]]$

As for (41a,b), this is clear, because the postverbal NP is an argument of the main predicate. However, the grammatical status of (42a,b) is surprising, given that (35b), repeated here as (45), is the argument structure of the main predicates of these examples:

(45) Intransitive Verb <Event, Agent, Resulting State>

In order to account for the grammatical status of (42a,b), C&R (1992) follow Rizzi (1982) and Lasnik and Saito (1984) in that theta-marking is not required for lexical government. The definition of lexical government proposed in Lasnik and Saito (1984) is given below:

(46) α lexically governs β if
a. α governs β,
b. α is a lexical category X^0 (X = [± N, ± V]), and
c. α assigns Case or a theta-role to β.

Given (46), because the postverbal NP may be assigned Case by the main predicate, it is lexically governed by the main predicate, despite of the fact that it is not an argument of the main predicate. However, Chomsky (1986a) attempts to eliminate Case-marking, thus the disjunction, from (46c). Given that Chomsky is correct, the argument status of the postverbal NP of the intransitive resultative construction becomes problematic. Under the analysis presented in this section, the argument/adjunct status of the postverbal NP is changed in the course of the derivation. The postverbal NP is theta-marked by the complex predicate created by head-movement of the secondary predicate to the main predicate in LF. Thus, it is properly governed at this level, where the ECP applies. Therefore, the ECP is not violated. The analysis entertained here then provides a solution to the apparent problem posed by the intransitive resultative construction for Chomsky's (1986a) definition of lexical government.

This analysis is also consistent with Chomsky's (1991) proposal in which lexical government is eliminated. He states that chains in (47a-c), but not the one in (48), are allowed in LF:

(47)a. A...A...A (uniform A-chain)
b. A'...A'...A' (uniform A'-chain)
c. A'...A (operator-variable chain)

(48) *A'...A'...A

Chomsky also suggests that deletion of an intermediate trace can apply only when it is necessary to create a ligitimate chain. In (41a,b), since the chain is (48), intermediate traces must be deleted. Hence, no ECP violation results. On the other hand, in (42a,b), prior to LF, the chain created by movement of the postverbal NP is presumably (47b), which is a legitimate chain. Then, no intermediate traces are required to be deleted. It is in LF that this chain is (48), and thus, deletion of the intermediate traces must apply. Therefore, no ECP violation occurs in (42a,b), and the marginality of these examples are correctly predicted.

5 Op-Movement in the Intransitive Resultative Construction

This section deals with Op-movement in the intransitive resultative construction. Let us start with (49a,b):

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(49)a. ??Which wire did Jan twist strands of t straight?
b. ??Which shoes did Jan run the soles of t thin?

(Roberts, 1988)

The marginality of these examples indicates that extraction of a WH-phrase out of the postverbal NP in overt syntax is not allowed. This is not surprising under my analysis. This is because in overt syntax, the postverbal NP has not received an argument status yet, and thus, Subjacency effects should be observed in these examples. Then, consider (50a-d):

(50)a. the wire (that) Jan twisted strands of straight
b. the shoes (that) Jan ran the soles of thin
c. the Nikes (that) I ran the soles of threadbare/ragged (C&R, 1992)
d. the film (that) the producer talked the cast of to death (C&R, 1992)

In these examples, if Op were extracted out of the postverbal NP in overt syntax, these examples should also have the same grammatical status as (49a,b) above. Therefore, I conclude that Op moves in LF in (50a-d). This further indicates that predication relationship must be established by LF (contra Williams, 1980). This is, of course, a desirable result for the minimalist approach to linguistic theory (Chomsky, 1993, 1995) which attempts to eliminate D-structure and S-structure conditions. Also, this is consistent with the analysis of secondary predicates introduced in Section 3 in which predication relationship is established through theta-identification or raising to tense, by LF.

Secondly, to the extent that the above conclusion is correct that Op-movement can take place in LF, Op-movement must take place in LF under the principle of economy (Chomsky, 1991, 1995). Then, the marginality of examples like the following suggests that Subjacency effects are also observed in LF.

(51) ??The man (that) John heard the rumor that Mary met

Whether or not Subjacency Condition applies in LF as well as in overt syntax has been discussed extensively in the literature (e.g., Huang 1982, Nishigauchi 1986, Choe 1987). However, under the minimalist appearch to linguistic theory (Chomsky, 1993, 1995; Chomsky and Lasnik 1993), this is no longer an issue. Chomsky and Lasnik (1993) state that "an expression is a subjacency violation if its derivation forms a starred trace. It is an ECP violation, if, furthermore, this starred trace remains at LF". In (51), its derivation creates a starred trace because of the complex NP island, but it can be erased for the purpose of the ECP. Therefore, under this view, the marginality of this example is naturally expected. Therefore, examples like (51) can be taken as evidence for the minimalist approach to linguistic theory put forth in Chomsky 1993, 1995 and Chomsky and Lasnik, 1993.

6 Concluding Remarks

This paper argued that the intransitive resultative construction requires head-movement of the secondary predicate to the main predicate in order to assign the theta-role to the postverbal NP in LF. Then, this construction is taken as an instance in which theta-role assignment is derivational. This supports Bowers, 1993; Chomsky, 1993, 1995; Larson, 1988, among others. More specifically, the analysis presented in this paper leads to the conclusion that D-structure and S-structure, if they exist, do not play any crucial role with respect to theta-role assignment and the Projection Principle, cannot be maintained as stated in Chomsky, 1981. What is required is that all theta-relations must be established by LF.

NOTES

[1] In addition, it has been known (Simpson, 1986, Hoekstra, 1988, 1992, among others) that not all transitive verbs can have a resultative OSP. Witness the following contrast:

(i)a. John painted the house red.
b. *I saw the hero stiff.

(Simpson, 1986)

Simpson argues that only verbs that necessarily entail some effects on, or contact with, their objects, can head transitive resultatives. Verbs like *paint* entail some effects regarding a color on the house, and the resultative interpretation is available in (ia). Verbs like *see*, on the other hand, do not necessarily entail an effect on their objects. Thus, (ib) is ungrammatical.

There is still a further restriction on verbs that can head resultatives. Consider the following examples from Rapoport (1993):

(ii)a. *I lit the match smoky.
b. *I hit three people upset.

The verbs in (ii) are classified as achievement verbs in Vendler's (1967) sense. Hoekstra (1988, 1992) and Rapoport (1993) argue that only process or activity verbs can appear in resultative constructions, whether transitive or intransitive.

[2] This section is based on Miyamoto, 1994.

[3] See Carlson (1977) for much discussion on stage-level/individual-level distinction of predicates.

[4] See also Davidson (1967) for discussion on the event argument.

[5] Since the raising of the object NP to AGRoP SPEC is not crucial to make a point, I do not illustrate this movement.

[6] See Rapoport (1991) for much discussion on the stage/individual-level distinction of predicates observed in sentences containing an adjunct secondary predicate. See also Speas (1990) for some relevant discussion on this issue.

[7] Raising of the copula to tense may be sufficient for the main predicates in (26) to assign the most external theta-role. Because the choice between these two possibilities does not affect the point I am making here, I tentatively assume that the main predicates in (26) are raised to tense.

[8] In order to avoid unnecessary complications, I omit AGRoP and do not illustrate V-movement in (30) and (31).

[9] An anonymous reviewer has pointed out another possibility that *their Nikes* is base-generated as the subject of *threadbare*, and then, it is raised to the object position of the main predicate via AGRP SPEC, in order to satisfy the restriction on the resultative construction which requires the main predicate to have a direct object.

Under the present assumptions, however, this possibility is not tenable because of the c-command condition/the proper binding condition (Fiengo 1977) which requires the head of a chain to c-command its tail. In (37) and (38), the intermediate trace in AGRP SPEC/AP SPEC cannot be c-commanded by *their Nikes* in the object position of the main predicate. Therefore, I will not pursue this possiblity further.

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